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National Aeronautics and Space Administration

FINAL TECHNICAL REPORT

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Title of Research: **Spectroscopy of an Ultraviolet Emission Knot in the Vela SNR: A Test of Shock Models**

Principal Investigator: Christopher Martin

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The following summarizes the status of the EUVE Guest Observation "EUV Spectroscopy of an Ultra-Soft Emission Knot in the Vela SNR." The purpose of this observation is to provide a probe of shock physics in the poorly-tested intermediate-velocity regime (200–400km/s) in order to better understand middle-aged SNRs and to test theories of their interaction with the ISM.

- Discussed observation strategy with the EUVE GO staff and decided on a two prong approach, splitting the allotted observing time between observations in the Short Wavelength (SW) and Medium Wavelength (second order) (MW2) spectrographs.

- Iterated with EUVE spacecraft schedulers to choose the best roll angles available for the observation.

- Installed EUVE GO software and new versions of IRAF on Sun workstation for analysis of EUVE data.

- Completed both parts of observation, and have received data.

- Obtained the EUVE Deep Survey image that was acquired during our Guest Observation.

- Have developed a set of routines specfically designed to analyze extended emission in the EUVE spectrometers, both the SW and MW2 channels.

- Have developed routines for finding and filtering out airglow and background-produced spurious features in extended spectra, critical for this observation.

- Are currently analyzing the complete data set.

- Co-Investigators S. M. Kahn and W. W. Craig (UC Berkeley) have continued to acquire and analyze data on the Vela SNR in other wavelength bands. This data will be used in conjunction with the EUVE spectrum to understand and constrain the physical parameters and processes of the SNR.